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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,633	09/13/2000	Scott J. Daly	KLR 7146.095	7673

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EXAMINER
WERNER, BRIAN P

ART UNIT	PAPER NUMBER
2621	9

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/661,633	DALY ET AL.
	Examiner	Art Unit
	Brian P. Werner	2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *10/6/00, 10/17/02 & 11/29/02*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-51 and 53-61* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *15-20* is/are allowed.

6) ☒ Claim(s) *1-4,6,7,10,11,13,14,21-23,26-29,31,33,37,39-42,44,45,53,54 and 58-60* is/are rejected.

7) ☒ Claim(s) *5,8,9,12,24,25,30,32-36,38,43,46-51,55-57 and 61* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *13 September 2000* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a) ☐ All b) ☐ Some * c) ☐ None of:

　　　　1. ☐ Certified copies of the priority documents have been received.

　　　　2. ☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date *4*.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This Office Action is responsive to the following submissions:

The substitute specification filed on October 6, 2000;

Amendment A, filed on October 6, 2000;

Amendment B, filed on October 17, 2002; and

Amendment C, filed on November 29, 2002;

All of which have been entered. Claims 1-51 and 53-61 are now pending.

Claim Objections

2.   The following quotations of 37 CFR § 1.75(a) is the basis of objection:

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming
the subject matter which the applicant regards as his invention or discovery.

3.   Claims 51 and 58 are objected to under 37 CFR § 1.75(a) as failing to particularly

point out and distinctly claim the subject matter which the applicant regards as his

invention or discovery. Claim 51 seems to recite an equation, but the equation itself is

missing. The equation of claim 20 will be assumed for examination purposes. Claim 58

depends from a cancelled claim (i.e., claim 52). Claim 58 will be assumed to depend

from claim 37 for examination purposes.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claim 10 is rejected under 35 U.S.C. 102(e) as being anticipated by Jacquin et

al. (US 5,764,803 A).

Regarding claim 10, Jacquin discloses detecting a facial region ("face" at column

2, line 15) within a video ("video" at column 1, line 8) comprising (Note: preamble given

weight because it is referred to in the body, and breaths life into the claim):

calculating a difference between a first and subsequent frame (figure 1, numeral

20);

determining plural candidate facial regions within the difference image

("candidate ellipses" at figure 2); and

fitting the candidate facial regions to the difference image to select one of the

candidate facial regions ("chosen ellipse" at figure 2; "fitness metric" at column 7, line

15), based on a combination of three factors, including a fit factor representing a fit of

the candidate ellipse to the difference image ("d_{border}" at column 7, line 19, equation 12),

a location factor representative of the location of the candidate facial regions within the

video (this limitation is equally anticipated by at least three elements in Jacquin: first, by

"d_{motion}" at column 7, line 19, equation 12; second, by "separation measure D" at column

9, line 10; and third, by "location" at column 8, line 17), and a size factor representative

of the size of the candidate facial regions (this limitation is equally anticipated by at least

two elements in Jacquin: first, "P_{motion}" at column 7, line 19, equation 12, and second,

"size and shape" at column 8, line 18).

6.   Claims 21, 22, 23, 26-29, 31, 33, 37, 53, 54 and 58-60 are rejected under 35

U.S.C. 102(e) as being anticipated by Ryoo (US 5,990,957 A).

Regarding claims 28, 37 and 59, Ryoo discloses a method for encoding video

("video coding" at column 1, line 7; preamble given weight because it is referred to in

the claim body) comprising:

detection a location of a facial regions of a fame of video (a frame is segmented

into "video object planes", or "VOPs" at column 2, line 16, as depicted in figure 5B; once

such VOP is a facial region; i.e., "a face portion" at column 12, line 23);

calculating a sensitivity value for each of a plurality of locations within the frame

(for each VOP, a sensitivity value is added or subtracted to the target bit allocation for a

specific VOPs as described at column 11, lines 5-35; that is, bit are "incremented for

important VOPs" at column 11, line 10; see "no_of_add_bits" at column 11, line 23; this

number is then subtracted from unimportant VOPs; once such important VOP is that of

the facial region as described at column 12, line 23); and

encoding the frame in a manner that provides substantially uniform apparent

quality to perceiving detail at eccentric visual angles of the plurality of locations to the

viewer when the viewer is observing the facial region (FIRST: "picture quality is

enhanced ... since a uniform picture quality is generally maintained even when the

compression rate is different between each portions of a picture in view of video

characteristics" at column 12, lines 28-32; this is because the coding of all image areas

in done in accordance with a "visual sensitivity classifier" at figure 2, numeral 23, which

takes into account "human visual sensitivity" at column 2, line 21; SECOND: facial

region is the subject of the video and what the viewer will focus on; so by encoding that

region with finer quantization [i.e., less compression], the inherent property of the

human visual system to perceive finer detail at the center of the field, and less detail in

the periphery of vision is taken advantage of; therefore, even with coarser compression

in the periphery [i.e., outside of the facial region], the apparent quality will be uniform).

Regarding claims 27 and 58, the total number of bits per frame is kept constant

("target bit rate of the entire frame is kept constant" at column 10, line 46; "entire bit

amount can be kept constant" at column 12, line 18).

Regarding claims 22, 23, 29, 53, 54, and 60, the encoding of the locations is

based on a quantization value representative of a base quantization factor divided by

sensitivity information (the target bit rate is divided by frame texture target bits, which is

sensitivity information, at column 11, line 33).

Regarding claims 21, 22 and 31, the limitations recited therein are anticipated by Ryoo as described above. Further, and commensurate with the claim requirements, Ryoo adaptively quantizes and encodes "blocks" (i.e., "each macroblock" at column 5, line 27; "each block" at column 11, line 44).

Regarding claims 26 and 33, quantization values are adjusted according to the number of blocks remaining to be encoded ("target bits" at column 11, line 42), number of bits still available ("buffer occupancy" at column 11, line 44), and sensitivity and texture of the remaining blocks ("visual sensitivity ... variance for each block" at column 11, line 43).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1, 4, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Jacquin et al. (US 5,764,803 A) and McLaughlin (Randomized Hough Transform: Better Ellipse Detection).

The Jacquin Reference

Regarding claims 1 and 10, Jacquin discloses detecting a facial region ("face" at column 2, line 15) within a video ("video" at column 1, line 8) comprising (Note:

preamble given weight because it is referred to in the body, and breaths life into the

claim):

calculating a difference between a first and subsequent frame (figure 1, numeral

20);

determining plural candidate facial regions within the difference image

("candidate ellipses" at figure 2); and

fitting the candidate facial regions to the difference image to select one of the

candidate facial regions ("chosen ellipse" at figure 2; "fitness metric" at column 7, line

15), where the difference image used for the fitting is free from being transformed as a

result of the determining step (once the candidate ellipses are determined, then Jacquin

uses a "fitness metric" at column 7, line 15 and equation 12 to compute the fitness of

each of the candidate ellipses with the difference image directly; for example, Jacquin

states, "measure of the density of edge data on a candidate ellipse border (i.e., the

percentage of the pixels on the border which have classified as edge pixels be being

assigned the value b2)" at column 7, line 20; that is, the density of the "pixel" data of the

original difference image that are on the border of the candidate ellipse is measured;

thus, in the "fitting" step, Jacquin uses the original, untransformed difference image).

Regarding claim 6, the fitting is based on a combination of three factors,

including a fit factor representing a fit of the candidate ellipse to the difference image

("d_{border}" at column 7, line 19, equation 12), a location factor representative of the

location of the candidate facial regions within the video (this limitation is equally

anticipated by at least three elements in Jacquin: first, by "d_{motion}" at column 7, line 19,

equation 12; second, by "separation measure D" at column 9, line 10; and third, by "location" at column 8, line 17), and a size factor representative of the size of the candidate facial regions (this limitation is equally anticipated by at least two elements in Jacquin: first, "P_{motion}" at column 7, line 19, equation 12, and second, "size and shape" at column 8, line 18).

Differences

Regarding claim 1, Jacquin's does not teach determining the plural candidate facial regions within the difference image **based on a transform of the difference image in a spatial domain to a parameter space**. Note: Jacquin does not specifically disclose how the initial candidate ellipses are formed. All Jacquin states is that "ellipse finder 44 generates candidate ellipses based on the foreground motion-and-edge image data" at column 6, line 61.

Regarding claims 4 and 10, Jacquin does not teach a Hough transform.

The McLaughlin Reference

Regarding claim 1, McLaughlin discloses a system in the field of image processing, and in the same problem solving area of finding ellipses in an image ("then the ellipse is judged to exist" at page 411, right column), comprising determining ellipses within an image based on a transform of the image in a spatial domain to a parameter space ("p, q, r1, r2, θ" and "5D parameter space" at page 411, right column).

Regarding claims 4 and 10, McLaughlin's parameter space is Hough space ("Hough Transform for ellipse detection" at page 412, left column, bottom paragraph).

The Combination

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the Hough parameter space ellipse finding method taught by McLaughlin, as the method of generating the candidate ellipses required but unspecified by Jacquin (i.e., as described by Jacquin at column 6, line 61), because the McLaughlin has "demonstrated high accuracy" and it has "shown tolerance to certain types of noise and partial occlusion" (McLaughlin page 414, left column), thus ensuring that the potential face regions of Jacquin are not missed even when in noisy image or when partially occluded by other objects in the image (as faces sometimes are).

9.   Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Jacquin et al. (US 5,764,803 A) and McLaughlin (Randomized Hough Transform: Better Ellipse Detection) as applied to claim 1, and further in combination with Sexton (US 5,086,480 A).

Regarding claims 2 and 3, Jacquin does not threshold the difference image by setting values of the difference image that are less than a threshold to a selected value.

Sexton discloses a system that detects faces in an image sequence (e.g., figures 2), comprising subtracting adjacent frames (figure 1, numeral 2), where Sexton teaches the further step of thresholding the difference image (figure 1, numeral 3) by setting

values of the difference image that are less than a threshold to a selected value ("each

pel below the threshold is set to minimum intensity (0)" at column 3, line 1).

It would have been obvious at the time the invention was made to one of ordinary

skill in the art to incorporate into the algorithm of Jacquin, following the image

subtraction step at figure 1, numeral 20, the additional step of thresholding the

difference image as taught by Sexton, in order to remove "a large quantity of the

random noise" (Sexton, column 3, line 3) and thus improve the accuracy of facial

detection and reduce processing time by removing noisy regions that are irrelevant to

the extraction of a facial region.

10.   Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Jacquin et al. (US 5,764,803 A) and Sexton (US 5,086,480 A).

Regarding claim 13, Jacquin does not threshold the difference image by setting

values of the difference image that are less than a threshold to a selected value.

Sexton discloses a system that detects faces in an image sequence (e.g., figures

2), comprising subtracting adjacent frames (figure 1, numeral 2), where Sexton teaches

the further step of thresholding the difference image (figure 1, numeral 3) by setting

values of the difference image that are less than a threshold to a selected value ("each

pel below the threshold is set to minimum intensity (0)" at column 3, line 1).

It would have been obvious at the time the invention was made to one of ordinary

skill in the art to incorporate into the algorithm of Jacquin, following the image

subtraction step at figure 1, numeral 20, the additional step of thresholding the

difference image as taught by Sexton, in order to remove "a large quantity of the random noise" (Sexton, column 3, line 3) and thus improve the accuracy of facial detection and reduce processing time by removing noisy regions that are irrelevant to the extraction of a facial region.

11.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Jacquin et al. (US 5,764,803 A) and McLaughlin (Randomized Hough Transform: Better Ellipse Detection) as applied to claim 1, and further in combination with Eleftheriadis et al. (US 5,852,669 A).

Regarding claim 7, Jacquin does not reduce the number of pixels in the frames prior to calculating the difference frame.

Eleftheriadis discloses a system that detects faces in an image sequence (e.g., figures 3 and 5), comprising pre-processing the image frames by reducing the number of pixels in the frames (figure 5, numeral 94 includes decimator 122 at figure 6, which reduces the image sizes; e.g., "decimation factor c" at column 6, line 4).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to reduce the image sizes of the current and previous frames of Jacquin (i.e., as depicted in figure 1) as a pre-processing step as taught by Eleftheriadis, to "provide for a low computational complexity" and thus avoid "exhaustive searches" (Eleftheriadis, column 6, lines 49-52) by virtue of having to process fewer pixels, and thus less data which still retaining the important face like regions in the image.

12.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Jacquin et al. (US 5,764,803 A) and Eleftheriadis et al. (US 5,852,669 A).

Regarding claim 14, Jacquin does not reduce the number of pixels (i.e., scale) in the frames prior to calculating the difference frame.

Eleftheriadis discloses a system that detects faces in an image sequence (e.g., figures 3 and 5), comprising pre-processing the image frames by reducing the number of pixels in the frames (figure 5, numeral 94 includes decimator 122 at figure 6, which reduces the image sizes; e.g., "decimation factor c" at column 6, line 4).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to reduce the image sizes of the current and previous frames of Jacquin (i.e., as depicted in figure 1) as a pre-processing step as taught by Eleftheriadis, to "provide for a low computational complexity" and thus avoid "exhaustive searches" (Eleftheriadis, column 6, lines 49-52) by virtue of having to process fewer pixels, and thus less data which still retaining the important face like regions in the image.

13.   Claims 39 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryoo (US 5,990,957 A) as applied to claim 37 above, in combination with Jacquin et al. (US 5,764,803 A) as applied to claim 10 above.

While Ryoo extracts a facial region for coding as described above, Ryoo does not teach the specific method of extracting the facial region as recited in claim 37.

Jacquin teaches just such a method as described in the claim 10 rejection above.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize, as the face regions extraction method required by Ryoo, the method taught by Jacquin, in order to provide a facial extraction method that is "well suited to scenes having static, albeit complex, backgrounds" (Jacquin, column 2, line 30), which provides "improved tracking of the objects of interest" (Jacquin, column 3, line 7).

14.   Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryoo (US 5,990,957 A) and Jacquin et al. (US 5,764,803 A) as applied to claim 39, and further in combination with McLaughlin (Randomized Hough Transform: Better Ellipse Detection).

In the Ryoo and Jacquin combination as applied to claim 39 above, while Jacquin determines a plurality of candidate regions, Jacquin does not teach a Hough transform.

McLaughlin discloses a system in the field of image processing, and in the same problem solving area of finding ellipses in an image ("then the ellipse is judged to exist" at page 411, right column), comprising determining ellipses within an image based on a transform of the image in a spatial domain to a parameter space ("p, q, r1, r2, θ" and "5D parameter space" at page 411, right column), where the parameter space is Hough space ("Hough Transform for ellipse detection" at page 412, left column, bottom paragraph).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the Hough parameter space ellipse finding method taught by

McLaughlin, as the method of generating the candidate ellipses required but unspecified by Jacquin (i.e., as described by Jacquin at column 6, line 61), because the McLaughlin has "demonstrated high accuracy" and it has "shown tolerance to certain types of noise and partial occlusion" (McLaughlin page 414, left column), thus ensuring that the potential face regions of Jacquin are not missed even when in noisy image or when partially occluded by other objects in the image (as faces sometimes are).

15.   Claims 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryoo (US 5,990,957 A) and Jacquin et al. (US 5,764,803 A) as applied to claim 39, and further in combination with Sexton (US 5,086,480 A).

In the Ryoo and Jacquin combination as applied to claim 39 above, while Jacquin calculates a difference image, Jacquin does not threshold the difference image by setting values of the difference image that are less than a threshold to a selected value.

Sexton discloses a system that detects faces in an image sequence (e.g., figures 2), comprising subtracting adjacent frames (figure 1, numeral 2), where Sexton teaches the further step of thresholding the difference image (figure 1, numeral 3) by setting values of the difference image that are less than a threshold to a selected value ("each pel below the threshold is set to minimum intensity (0)" at column 3, line 1).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to incorporate into the algorithm of Jacquin, following the image subtraction step at figure 1, numeral 20, the additional step of thresholding the difference image as taught by Sexton, in order to remove "a large quantity of the

random noise" (Sexton, column 3, line 3) and thus improve the accuracy of facial

detection and reduce processing time by removing noisy regions that are irrelevant to

the extraction of a facial region.

16.   Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryoo

(US 5,990,957 A) and Jacquin et al. (US 5,764,803 A) as applied to claim 39, and

further in combination with Eleftheriadis et al. (US 5,852,669 A).

In the Ryoo and Jacquin combination as applied to claim 39 above, while Jacquin

calculates a difference image, Jacquin does not reduce the number of pixels (i.e., scale)

in the frames prior to calculating the difference frame.

Eleftheriadis discloses a system that detects faces in an image sequence (e.g.,

figures 3 and 5), comprising pre-processing the image frames by reducing the number

of pixels in the frames (figure 5, numeral 94 includes decimator 122 at figure 6, which

reduces the image sizes; e.g., "decimation factor c" at column 6, line 4).

It would have been obvious at the time the invention was made to one of ordinary

skill in the art to reduce the image sizes of the current and previous frames of Jacquin

(i.e., as depicted in figure 1) as a pre-processing step as taught by Eleftheriadis, to

"provide for a low computational complexity" and thus avoid "exhaustive searches"

(Eleftheriadis, column 6, lines 49-52) by virtue of having to process fewer pixels, and

thus less data which still retaining the important face like regions in the image.

Allowable Subject Matter

17.   Claims 15-20 are allowed. Independent claim 15 distinguishes over the prior art

in that the prior art does not teach determining a spatial location of a facial region, and

then calculating a sensitivity value for each of a plurality of spatial locations based on:

the spatial location of the facial region in relation to the plurality of spatial

locations; and

a non-linear model of the sensitivity of a human visual system's ability to perceive

image detail at eccentric visual angles.

The above combination of elements provides for a high quality yet low bandwidth

of a video signal comprising a facial image.

18.   Claim 5, 8, 9, 12, 24, 25, 30, 32-36, 38, 43, 46-51, 55-57 and 61 are objected to

as being dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening

claims.

Double Patenting

19.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11
F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA
1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*,
418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

20.   All of the pending claims are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the patented claims U.S. Patent No. 6,173,069 B1. Because of the number and variation between of claims, one claim will be exemplified. For example, claim 37 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 18 of U.S. Patent No. 6,173,069 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 18 teaches all of the elements of claim 37. The filing of a proper and timely terminal disclaimer will serve to overcome this rejection immediately.
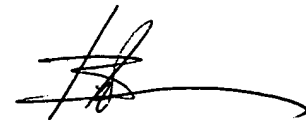
Conclusion

21.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Werner whose telephone number is 703-306-3037. The examiner can normally be reached on M-F, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Brian Werner
Primary Examiner
Art Unit 2621
March 11, 2004

BRIAN WERNER
PRIMARY EXAMINER